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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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COUNTRY East Germany

DATE DISTR. 29 November 1954

SUBJECT Miscellaneous Information on Scientific-Technical Bureau No. 3 (WTB-3) of SAG Kabel

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SUPPLEMENT TO REPORT NO

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1. Scientific Technical Bureau No. 3 (WTB-3) of the SAG Kabel was located in the former administration building of the Knorr-Bremse AG, 9-17 Neue Bahnhof Strasse, Berlin O 112. WTB-3 was a development plant which, in September 1953, had a work force of about 500; 50 to 55 percent were engineers and technicians, 35 percent were skilled laborers, and the remainder administrative personnel.[1] Work was done in one shift. In order to fill the production quota of highest priority requests, the plant installations and the work force were to be enlarged. On 29 and 30 September 1953, one third of the personnel worked on an inventory for conferences concerning the conversion of WTB-3 to a German-controlled enterprise.

2. The research orders, referred to as "Themes", were numbered: those for the USSR, which included about 90 percent of the total, were indicated by the letter "K"; projects for the East German government were indentified by the letter "A" and included most of the remaining 10 percent. The time schedule for most projects, usually 1 to 2 years, was much too short. The projects were handled according to the following pattern:

   a. Examination of the technical terms
   b. Collection of the required literature
   c. Planning and calculation
   d. Construction of the experimental setup and preliminary experiments
   e. Preparation of a preliminary plan to be approved by the "customer"
   f. Construction of a laboratory model, assembly and testing of the combined functioning of the individual structural parts
   g. Design of the instrument. Before the actual design was begun, final switching digrams had to be prepared with all the parts and material available.
   h. Construction of a model. Individual parts were frequently produced by other East German firms.
   i. Testing and experiments; balancing
   j. Documentation in German and Russian, including test records, photographs of the device and its component parts, a technical description, and all designing records

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9. Testing and experiments, balancing.
10. Documentation in German and Russian to include the test records, photographs of the instrument and its essential parts, a technical description and all designing records.
k11. Acceptance by Soviet engineers, generally in civilian clothes but sometimes in Air Force or Navy uniforms, who arrived from Moscow. Occasionally the Soviet General Administration, USIG, or the Main Administration of the SAG Kabel accepted the products.
l 12. Shipping in seaworthy packing. Trucks with Soviet guards hauled the products away. After the acceptance all sketches of the instruments had to be turned in.

3. No information was obtained on the origin of the work order, the place of destination and the purpose of the constructed instrument. The contact with the customer was maintained by correspondence only. About once or twice a year, Soviet civilians who had little knowledge of the technical problems involved and were primarily interested in production quotas visited WTB-3 to check up on important projects. A monthly status report, the so-called Grafikplan, was prepared on each project to show the status of the activities and the funds still available. The Soviets financed the projects by extending credits in accordance with the status of the activities. Of about 27 projects handled in 1952, only nine were completely unscheduled. Difficulties effecting the activities included poor planning, limited time, lack of qualified designers often resulting in inadequate basic records, and bottlenecks in the material supply. When a project was behind schedule, the Soviets refused to extend credits which, in early 1953, had caused a deficit of 2,500,000 to 3,000,000 east marks. Because it was feared that the plant would have to be closed, the administration prepared a new work plan and promised to complete the 1952 projects during 1953. By September 1953, the deficit was reduced to about 20 to 30 percent by introducing work shifts, overtime work, better planning, and by hiring of qualified technicians.

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5. Although new testing and measuring instruments had been procured by September 1953, the quality and quantity of the plant equipment was still inadequate. The available instruments included old and new models purchased [redacted], some from Funkwerk Erfurt and Funkwerk Dresden, some from the Zwoenitz Plant for Measuring Instruments, some old instruments produced by Siemens, AEG and Telefunken, and also instruments produced by WTB-3 itself. The machinery installation was in good condition and essentially composed of German wartime and postwar models. There was no lack of spare parts and tools, so that the production was definitely not affected by any shortages of machinery. 25X1

6. In spite of a basic order not to use western material and former German Army equipment still available at WTB-3, western products were used occasionally. Single parts purchased from the West included:

a. Bosch-type metal paper and electrolytic condensers. The electrolytic condensers produced [redacted] did not meet the temperature requirements. 25X1 [redacted] 25X1

b. Philips OA 50-type germanium diodes. The measured values obtained by the silicon diodes produced by the HF Plant differed widely and were not constant enough, while the germanium diodes produced by the Dralowid Plant in Teltow which could have been used sometimes were available only in small series of two to five units.

c. RCA 5 D 21 type tubes were [redacted] because the same type of tubes produced by the HF plant were entirely unsatisfactory. 25X1

d. Iron hydrogen resistances of the Osram Firm.

e. High frequency iron cores and turning condensers of former German Army stocks were occasionally remodeled and declared an East German product before they were used.

7. Delivery plants working for WTB-3 included the Karl Weiss Firm, a private enterprise located in Greiz, Thuringia, producing hygrometers and related instruments;[3] the Jungmans & Kolosche Firm in Leipzig producing transformers, the Sander Firm for special cameras and the VEB Gaselan for Pintsch" type tension regulators.

8. Before the establishment of a cadre group of politically reliable persons, the Soviet General Administration judged the German personnel only according to their technical qualifications, efficiency and fulfillment of the production quota and disregarded their political activities and party membership. The cadre group was established as a result of the 17 June 1953 riots.

9. The High Frequency Department of WTB-3 developed high and low frequency instruments and the Department of Measuring Techniques developed electro mechanical measuring and testing instruments for aeronautical, naval, meteorological, navigational and electromedical purposes. Control and testing instruments for metallurgical plants, gas works and power plants and for material analysis were developed by the less important Department for Control Techniques. These instruments were to be used almost exclusively in East Germany.[2] The rather independent Metallurgical Department of WTB-3 was considered to be the only melting plant for precious metals in East Germany. Among other materials, platinum, gold, silver, chromium and palladium were processed there.

10. Project 58 B, involving the development of a measuring instrument for field strength components was ordered in 1952. The unit was to measure simultaneously and separately the vertical and horizontal components of an electric field. The high frequency voltage induced by means of a loop antenna was measured by comparison to the voltage produced by a calibrating oscillator. This system was based on a 1935 Philips type field strength meter of which photostat copies were available at WTB-3. With its two superheterodyne receivers covering a frequency range of 1 to 27 megacycles, the instrument was designed for the reception of amplitude and frequency modulated transmissions as well as for silent and sound modulated telegraphic transmissions. It was rated at an intermediate frequency of 473 kilocycles and a band width of 5 kilocycles. The requested measuring range reached from 1 microvolt to 100 millivolts. A sensitivity of 1 microvolt was never achieved, however, because background noises of the 2S4 & AC 7 type tubes occurred at 5 microvolts. The Deutsches Amt fuer Mass und Gewicht (German Institute of Dimension and Weight) informed WTB-3 that other East German institutes had also failed to measure precisely 1 microvolt at a frequency of 30 megacycles. It was requested that the unit be portable, vibration proof, operational at a temperature range of 60 centigrades, and with mains and battery power supply. The Soviets had ordered one unit with all records and a set of spare tubes; they specified that only parts made in East Germany be used. The amount of money spent on the project exceeded the 100,000 eastmarks limit by about 20 to 30 percent. From November 1952 to January 1953 the instrument was consigned to the Karl Weiss Firm in Greiz, It was accepted in July 1953. In September 1953, however, the measuring instrument was still at WTB-3, because, although they had accepted it, the Soviets were not entirely satisfied and asked for a better definition of the specification.

NOTE: VEB Gaselan is the former Julius Pintsch concern.

CONFIDENTIAL [redacted] 25X1

11. Project 53 - 5 M, Request No 506 - 13, covered the development of a recording instrument for irregularities of the intermediate frequency at the outlet of radio receivers. The unit was laid out for an intermediate frequency range of 30 kilocycles to 1.5 megacycles. Difficulties were involved, particularily with the development of the high frequency testing generator for 30 kilocycles to 30 megacycles, since the output voltage, measured at a 70 ohm resistance, had to be adjustable in fixed steps at a range from 1 microvolt to 10 volts. The potentiometer was based on an old Siemens calibrating circuit. The calibrating circuits were to be noninductive and to have certain values. Since the special manufacturing of these parts by the Dralowid Plant[4] required several months, the resistances had not all been received by September 1953. The generator designed for a sine modulation up to 100 kilocycles and for an impulse modulation of 10 cycles to 10 kilocycles had a natural sine modulation of 800 cycles and a degree of modulation of 30 percent. An impulse generator produced rectangular pulses at a sequence of 10 cycles to 10 kilocycles and of adjustable duration. The values obtained were automatically recorded on linear and logarithmically scaled recorders or, by means of special camera at various exposure speeds, on motion picture film. The screen of a two-beam oscillograph tube was photographed with a second two-beam tube serving as visual control unit. In order to finance another project for which the funds had been exceeded, the original budget of 1.200.000 eastmarks was reduced to 800,000 eastmarks. Two units, each with five sets of spare tubes, and all basic records, were scheduled to be delivered by 31 March 1954. The instrument was to be mounted on a frame and was designed for stationary operation. The same type of assembly was also used for other large instruments at WTB-3.

12. In early 1953, the plant hired about 12 persons who had been repatriated from the USSR. They received a monthly salary of about 1,800 Eastmarks which was much more than the old engineers of the plant were paid.

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1. [redacted] Comment. For table of organization and a list of personnel as prepared on the information obtained from both sources, see Annex 1. For a list of the various sections and the mashinery available at 9 to 17 Neue Bahnhofstrasse, see Annex 2. 25X1

2. [redacted] Comment. For a list of projects handled by WTB-3, see Annex 3. 25X1

3. [redacted] Comment. Physikal.techn.Ing. Buero und Werkstaetten Ing. Karl Weiss, Greiz, Thuringia. 25X1

4. [redacted] Comment. VEB Werk fuer Bauelemente der Nachrichtentechnik "Carl von Ossietzky", Teltow. 25X1

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Next 2 Page(s) In Document Denied

25X1

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Annex 3 [redacted]

E. Status as of September 1953 [redacted]

25X1

1. [illegible] recording stations for ionosphere measurements designed in two versions. Since the outdoor experiments with two laboratory models mounted on two special trucks conducted in the area north of Berlin up to the Baltic Sea, had not started before September 1953, the target date of 31 December 1953 was probably not met.

2. Narrow-sector DF unit, developed by the High Frequency Department was completed on schedule in 1953.

3. Activities in the decimeter field conducted by the High Frequency Department.

4. Flow meter, developed by the Department for Measuring Techniques.

5. Spectral analyzers, handled by the Department for Measuring Techniques and the High Frequency Department.

6. Single beam oscillograph, developed by the HF Department was completed on schedule in 1953.

7. Field strength measuring devices for all frequency ranges, developed by the HF Department.

8. Measuring equipment to measure and record atmospherics, developed by the High Frequency and the Low Frequency Department.

9. Ultrasonic delay line, still being developed by the Low Frequency Department.

10. Ultrasonic measuring instrument to check welded seams. The instrument was completed in 1952.

11. Sonic depth finder for depth of 11,000 meters. Although the device had met the requirements during the tests, it was still being improved in September 1953. Pocher, the designer of the instrument, was honorably mentioned by the Soviets and awarded a bonus.

12. Remodeling of a transmission level set for radio monitoring. The unit was completed in 1952 and was to be used for the East German broadcast.

13. Monitoring set to control broadcasting stations regarding the degree of modulation, divergences from the carrier frequency, modulation and intensity. The target date had been 1952, but the set was not completed before the fall of 1953.

14. Regugraph, to adjust and regulate watches and pocket watches. The project was handled by the High Frequency Department and completed in 1952. Small series of about 10 units were produced for the Glashuette Firm and by the Thiel Firm in Ruhla, Thuringia.

15. Project 58 H. Measuring instrument for field strength components

16. Project [illegible] Order 500 - 13, a recorder for irregularities of the intermediate frequency at the outlet of radio transmitters

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